1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

of a heavy wood, *cumarú;* it is two fingers thick and as much as 80 cm. long (fig. 4, *a*), and with it they crush and mill the material in a long semicylindrical trough (tau/ta'), sometimes open at both ends. In this hod they often work with a short wooden pestle; I saw one which ended at the top in a sculptured human head.

The cook shed is also the place where they make dry manioc flour, *farinha de mandioca*, which is probably the Tukuna product most desired by the Neobrazilians today. Formerly, the Tukuna did not know how to use it, but for dry flour substituted *beijú*, a thin flat cake of fermented manioc dough baked on a clay slab. They also had a flour made of maize cracked by the heat of fire,[16] which went by the name of a/tẽ'ẽ and was eaten with bananas.

The Neobrazilians probably taught the Tukuna how to make manioc dry flour, since so many of the Tukuna terms relating to it are Neobrazilian, for instance, the name of the product, ʊ:'i (l.g., *uí*), and of the utensils used in its manufacture: e.g., yapu'na, oven (l.g., *yapúna*), te'piti, press (l.g., *tipity*), kuču, hod for the dough (P., *cocho*).

I do not know what shape the earlier grater had; today it is invariably made of a punctured sheet of metal. There are still small graters which are made from the aerial root of the *paxiubinha*, and others made from the bony part of the tongue of the pirarucú, but they are no good for grating manioc roots; they are useful only in the preparation of certain medicines.

Like any other load, the manioc roots are brought from the garden patch in large conical baskets (pl. 4). These are made by the men—who, however, never use them—in an open-mesh technique, usually of split *cipó*, more rarely of uarumã stems. The Tukuna say that they learned to make this type of basket (va'tura; Tupi, *uaturá*) from the Omágua, who then made war against the Tukuna for copying an Omágua article. Formerly the Tukuna baskets were cylindrical, with a square bottom. All are carried with a tumpline of envira. Baskets of both types are in use today, although the first type predominates.

Aside from these carrying baskets, the Tukuna also have a large woven bag, ñẽ'/rį, closed by a drawstring passed through the mesh row of the opening; it often has a tumpline woven of the same material (pl. 7, *e*). This bag, *puçá*, with the mouth held open by a hoop of cipó or of elastic wood, also serves as a dip net. It is mentioned in the legend of the origin of culture heroes as one of two articles typically used by women and is one of the elements which the Tukuna share with the cultures of eastern Brazil and the Chaco.

Formerly, the Tukuna peeled manioc roots with the edge of a large bivalve shell, koru, common along the Solimões. This is used even today to scrape pineapples for the preparation of a cooling drink.

For soaking bundles of manioc roots in plain water the Tukuna invariably use an old canoe near the entrance to the house. The squeezed pulp from the press (tipity) is placed in a hod, open at both ends and set slightly inclined on two sawhorses. Nowadays, the Tukuna make "dry" farinha just as much as "wet"; they rarely bother with tapioca. The pulp is strained through square, large-meshed sieves made of strips of bamboo, *taboca*, or uarumã (ʊ:'i-čim|/|ⁿn).

For other purposes there is a small fine-meshed sieve, va'ira-čin|/|ⁿṅ (*váira*,

[16] The word for popcorn, *pipocas*, was not used here.—Trans.

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

III. SUBSISTENCE

Agriculture

241 [226] Agriculture and fishing are the principal sources of Tukuna economy. If forced to, the Tukuna will go for some time without collecting wild fruits or hunting; but the complete lack of garden products and fish simply spells misery to them.

[462] [476] [462] The garden patch, cleared and burned out of the virgin jungle, is as a rule made exclusively by the men, often in a communal work party, *uajurí;* but some widows, without masculine aid, clear the land and plant in the *capoeira* or secondary jungle growth. Both sexes pile up the rubbish and burn it, whereas planting is carried out exclusively by women and girls. The original instrument for felling trees was [412] the stone ax, whose appearance no one now remembers, but which, according to legend, the culture hero dyai' stole from the demon toi"ta [tu]"ta] (see page 131).

The four species of major importance for the Tukuna are bitter manioc, *mandioca brava* (*Manihot utilissima*), sweet manioc, *macaxera* (*M. aipi*),[1] maize, and yam, *cará* (*Dioscorea* sp.).[2] Lacking any one of these four, the Tukuna have a bad time of it, whereas the absence of other edible tubers, such as the sweet potato, and of other plants like sugar cane, pineapple, peanut (*manduví*),[3] and so on, affects them very little.

According to legend, a solitary old woman discovered both the tree which fur- [773] nished macaxera-like fruits and the art of making manioc flat cakes, beijús. On learning the secret, the men felled the tree and ate up everything; only Deer kept shoots and seeds in a basket (vatu') of which the culture hero dyai' later robbed him (see p. 131). For this reason the Tukuna refer to a cultivated plant as a pre-Columbian possession by saying that "it first came in Deer's vatu'."

Formerly, only sweet manioc was known to them; apparently bitter manioc and [717] the process of making manioc flour were introduced by the Neobrazilians.

In planting either variety of manioc, a woman goes ahead, armed with a long, [412] heavy, rounded stake of wood with a sharpened point (about 140 cm. by 7 cm.), with which she makes holes in the ground, a female companion trailing behind to insert the plant slips into the prepared soil. This stake (paye'i"n), when not in use, is kept under water near the entrance to the house or clearing, so that it will not dry out and lose weight. It is removed and dried off only on the eve of planting.

243 [773] Maize was not "in Deer's vatu'" but, according to legend, was given to the Indians by aria'na, a great coquette of the upper world, who brought it with her from one of the lower worlds, where she was once forced to sojourn against her will. (See p. 112.)

[462] The planting of maize, done preferably by men, is accompanied by a certain ceremoniousness that is not observed for any of the other plants. The kernels are placed first of all in a gourd of water. The planter then takes a little of this water in his mouth and sprays it over the kernels in order to make them more savory.

243 784 Until the plants reach a certain height he must submit to rigorous taboos. He cannot go near the fire, or eat or even touch the following fish: pirarucú (*Arapaima*

[1] Commonly known in Brazil as *aipi*.—Trans.
[2] A tuber also known as *inhame*.—Trans.
[3] *Arachis hypogaea;* commonly known as *amendoim;* T., tö"tl.

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

continued movement the sand widens and deepens the grooves, so that in time the binding has to be drawn tauter until finally the two sections of wood close completely about the cipó. This labor, which is very tiring since it lasts four days, is carried on invariably by two men, one standing on the platform, the other below, working just as if they were sawing boards in a sawmill.

Removing the grooved pieces from the scaffolding, but always keeping the cipó bound within, they untie and retie the lashings, section by section, reducing the piece to a round shape instead of the former square shape, the thickness varying from 1 to 1.5 cm. at the muzzle and from 3.5 to 4 cm. at the breech. They then cut off a section at each end—since here the abrasive action of the sand and movement always widens the bore a little too much—and with wax they firmly join the two halves. The two lengths they then bind spirally on the outside, from end to end, with a strip about 3 cm. wide from the smooth cipó guembé, and coat the whole with wax again.

At the breech they add a mouthpiece of *mkirapiranga* wood (*Cesalpinia echinata; condurú de sangue*) in the shape of a hollow spool. About 10 cm. from this they affix a sight made of wax, with a tooth of the squirrel, *acutipurú* (*Sciurus* sp.), set longitudinally with the convex side up.

Finally, they polish the barrel with a long wad of dried maize leaves with a cord tied at each end. Placing the blowgun in a horizontal position, two persons, each grasping an end of the cord, pull the wad back and forth through the bore until the desired result is obtained.

The Tukuna blowgun never has jaguar (*onça*) teeth at the mouthpiece as Tessmann was informed,[14] nor is the muzzle funnel-shaped, as in the plate of Barbosa Rodrigues.

In the house the blowgun is bound parallel to and pressed flat against a roof pillar, where it is tied at the top and bottom by two loops of cord. In order to remove any curvature, small wedges are inserted at the precise spot necessary between the weapon itself and the post to which it is lashed. When the weapon is not in use, the cleaning rod is generally left inside it.

I greatly admired the agility of the Tukuna in running through the jungle with this weapon, for its length makes it a clumsy thing to carry, and it is too fragile to stand strong knocks. But the Indians shift it from above the head to one side or the other, never knocking it against a tree trunk, and do not appear to be inconvenienced.

The dart (*očaʼgu*) for the blowgun is about 30 cm. long and 2 mm. thick. A twist of kapok, *sumakuma* (*Ceiba pentandra*), is rolled on at the rear end; below the point of the dart a small circular notch is cut so that the tip will break off in a wound.

The darts are kept in a long, small, cylindrical basket, *aljava* (*yɔːʼru*), with a square bottom and a round mouth. The outside is covered with wax and has tied to it a small sack which contains kapok. The Tukuna do not attach the little curare container shown in Barbosa Rodrigues' plate, since, before leaving the house, they always poison the number of darts they calculate will be needed. They spread the poison on the tip of the dart with a small spatula, then lay the darts so treated

[14] Tessmann, p. 560.

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

since it will lose its strength if brought to a boil. If it thickens too much, water is added. The process is tedious and demands much attention. When the liquid has reached the desired thickness, after about ten days, some six or eight black beetles called "pu"[illegible]," which feed on the fungus that grows on rotten wood, are sought in the clea[illegible] and are tossed alive into the liquid. These insects exude a fetid, yellow excretion. They are removed after about an hour, and the curare is then thickened with extreme care over a slow fire until the final consistency is that of a very dense honey, which grows even thicker upon cooling. The color is dark brown.

The mass is transferred to a small, globular pot (gu:'rẽ-čɛ-ɨ̃ɲ) especially made for this purpose, its mouth being covered with a banana leaf and securely tied. If the curare thickens too much with the passage of time, it is softened with a filtered infusion of pounded dyu'-ne leaves.

Fig. 6. Cross section of bow.

The production of curare is not at all a secret, although naturally each maker has his own individual technique. Although women and children are often present at this operation, they never take part in it beyond helping the husband bring home the raw materials or scraping the roots. Von Hassel's statement that "entre los Ticunas tienen las mujeres ... el oficio de fabricar el veneno" is inexact.[13] Sometimes they prepare a special little fire for this purpose at the edge of the clearing, but I have also seen them use the kitchen fire itself, the food being cooked to one side.

The efficacy of the Tukuna poison is discussed in the works of Barbosa Rodrigues and Santesson,[14] the latter dealing with the curare which I brought from Igarapé de São Jeronymo in 1929. I myself have seen it used in hunting monkeys. The effect on the wounded animal is to produce immediately incontinence of feces and urine, the creature falling in about three minutes.

Calixto daueru'kɨ told me that, while poisoning some darts for a hunt one day, he wounded himself very superficially in the hand. Immediately the action of the curare produced spasms of the facial muscles, pains, and incontinence of urine and feces. He cured himself by drinking his own urine, which the Tukuna consider the only remedy.

I was told of another Indian who went alone into the jungle to hunt with his blowgun. When he fired at some arboreal animal, the dart erred in its flight, ricocheted off a tree, and struck him in the back. Later, he was found dead in the jungle. It is because of such experiences that the Tukuna prefer not to go alone while hunting with curare.

For large game they do not use the blowgun, but the bow and arrow and lance. The bow (vɛra') is sometimes 2 m. long. Figure 6 shows it in cross section. The

[13] Hassel, Las tribus salvajes de la region Amazónica del Perú, Bol. Soc. Geog., 17:58.
[14] C. G. Santesson, Ein starkes Topf-Kurare von den Tucuna- (Ticuna-) Indianern des oberen Amazonas, Acta Medica Scandinavica, 75:1–9.

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

For the deer that invade the plantations, pitfalls (a:'ma[n]) are dug to the depth of a meter and a half, a sharpened paxiuba stake being set vertically at the bottom. In a pitfall that I saw, a dog had died, and a few days later an alligator also fell into it. 224

Gathering

The gathering of wild fruits and the capture of animals that cannot properly be included under hunting are still carried on by both sexes; by men when the opportunity presents itself and by women on trips made for the purpose. 222 [462]

There are many varieties of edible wild fruits, although most have no economic importance, being no more than mere tidbits, like the pods of the *arara tucupy*, the seeds of which are covered with a thin layer of thick, sweet liquid. The only fruits of real economic importance are those of the four palms, burity (*Mauritia vinifera*), *bacabeira* (*Oenocarpus bacaba*), *patauá* (*Oenocarpus patauá*), and açahy (*Euterpe* sp.). All four species are common in the jungles of the Tukuna. During the period of gathering one always sees large earthenware vessels containing burity fruits soaked in a solution to make the rinds come off more easily, and the Indians constantly help themselves. The fruits of these four palms are then macerated in tepid water and a fatty drink is prepared [illegible] process common among the Neobrazilians as well, the separation of the pulp from the stones by treading. The liquid is passed through a very fine sieve (va'iri-činj-[n]ũ, from va'ira, açahy). A sufficient quantity is then prepared so that the neighbors may be invited to drink also. The gathering of the fruits and the preparation of the beverage are feminine tasks. 222 [462] [415] 272 [171] [462]

The Tukuna are acquainted with the Brazil nut, or niggertoe, *castanha do Pará* (*Bertholletia excelsa*), but they eat only the kernels without preparing from them either milk or oil. Nino, an Indian of Igarapé da Rita, had planted near his house about ten such saplings, which were then bearing fruit. 262 [245]

The Tukuna will not eat toads, though they do not reject various species of frogs; they also eat beetle larvae, which are found in burity palms, and the queens of *saúva* ants (l.g., *içú; Atta cephalotes*) when they are swarming. Of the various kinds of honey the most appreciated is that of the wild bee, jandaíra. Bees are not raised at home. [263]

Food

The most common food is fish, either boiled or freshly smoked and eaten with farinha (formerly with beijús). Seasoning is obtained by thrusting the fingertip into a small dish with crushed salt and pepper and then licking it. At present, the salt is bought from the Neobrazilians, but it is said that in the old days it was prepared from the ash from burned green marajá palm leaves. 262 [263] [459]

Of fish, the Indian takes only as much as he can swallow at one gulp, picking it, with a rapid pinch of the fingers, from the common receptacle. In consequence, the piece of fish shortly assumes such a tattered appearance that it looks like nothing more than a dog's dinner. 264

When there is roast game, no one cuts himself a large piece, but each in turn seizes the meat, tears off a chunk with the teeth, and tosses the remainder back

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

leaves laid on the floor of the house. Dry, pulverized leaves (*maniva*) of a certain kind of manioc are sprinkled on this dough, and banana leaves are placed on top. After two or three days, when the dough is uncovered, it is crusted over with a thick layer of white mould, in which may be seen the contours of the maniva leaves. The dough, which by now has a strong, sweet taste, is cut into strips and placed in a jar, where, little by little, it exudes a liquid that in color and taste somewhat resembles a bad port wine. In time this liquor becomes harsh, corrosive, and strongly intoxicating. At feasts it is served only in individual, small, long gourds and, since the available quantity is generally not great, only to persons of a certain distinction.

To prepare paiauarú proper, the women lift the dough from its storage place in the jar and, mixing it with water, strain it into another jar, from which it is dipped in gourds to serve the guests.

The preparation of beverages is an exclusively feminine task. Care is taken to prohibit a pregnant women from taking part, since her participation would ruin the product.

No one serves himself with his own hands except the women in charge of the jars. At all the celebrations there is a "server"—generally the uncle of the child or girl who is being feted or even a closer relative—whose function is to serve the full gourds to the guests, one by one, when they are seated, or to wait on them if while dancing they pass in front of the jars, thereby indicating their desire to drink. The supply of water for filtering drinks is also entrusted to the server.

To me paiauarú has a disagreeable taste of fermentation and rot, the fibers contained in it making it even more disgusting. The Indians, however, drink it with enormous satisfaction. Becoming drunk, as often happens, they vomit, wash the mouth with water, and continue to swill. If the beverage is to be kept in a "new" jar, used for the first time, they take care to call in the shaman, *pagé*, to remove with gestures any invisible substance that might blind those drinking from the container.

Besides these three beverages, there are still other fermented drinks, which are, however, rarely prepared, such as dëdne-ẽ|'| from cane (dë'dne) juice boiled and fermented in a jar; ui'-ẽ|'|, a sort of chicha made from yam tubers; a drink made of crushed pineapple, which after two days in the jar becomes potent but is also taken unfermented as a refreshment; and another drink, pururu'ka, made from boiled and fermented bananas.

Many of the men are today greatly addicted to cane rum, *cazaça*, which they purchase or receive as "treats" in the Neobrazilian establishments. One of the axioms against which no one on the Solimões will argue is: "Sem cazaça o indio naõ trabalha" ("Without rum the Indian won't work"). The worst influence is naturally exercised by the sugar-cane establishments that have rum stills and where the work is done almost exclusively by Indians. Some owners purposely get the Indians drunk in order to facilitate their exploitation.

In Belém I saw the cashier of one place, an incorrigible sot, ply women and girls with rum merely because it gave him pleasure to seem them blind drunk. The itinerant peddlers, too, in order to persuade Indians for their own purposes, habitually initiate the haggling with a glass of rum. On the other hand, neither

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

As Tessmann has already observed, there are no transversal flutes or clarinets of the type known as *toré*. A signal horn made of a simple piece of thick bamboo, with a lateral opening, closed on one side and open on the other, is invariably carried in the canoe for signaling the arrival of people and for calling them.

Panpipes commonly consist of eight tubes of bamboo (the longest being 15 cm.), joined by two pairs of rattan lashings (fig. 7, *b*). Panpipes are not played in pairs. The Tukuna name for them is čë'ku or dure'tu (Loreto). Loreto is the name of a sub-Andean department of Peru, pronounced in the Tukuna manner "dure'tu" which makes one suppose that the instrument has come from that region.

There is a kind of ocarina (pu|'čane) made from the seed of the *umarí* (*Porqueiba* sp.), and a clay whistle in the shape of a frog (və:'tavë, a name which imitates the frog's croak). Tessmann erroneously calls it *tó'ke*,[1] which is actually the name of a large megaphone (tə'/k|).

The Tukuna learned from the Neobrazilians not only how to play the violin but also how to make it, and on the Rio Jaeurapá there was an Indian whose violins were sought after by civilized persons—until the authorities of São Paulo de Olivença ordered his arrest for tax evasion (see p. 138). In spite of the attraction this instrument has for the Tukuna, they produce very little music from it, never playing their tribal melodies but only those which they learn from festivities of Neobrazilians in the region, who, for their part, are far from possessing the musical talent of the northeastern Brazilians.

Pottery

One finds evidence in the kitchen that the Tukuna still produce pottery. This art is principally practiced by women, but not exclusively so, for many men also perform this task to perfection, whereas many women never devote themselves to it.

In all the igarapés inhabited by the Tukúna, a plastic potters' clay of good quality is found more or less frequently; it almost always occurs in the sloughs at the foot of the high bluffs along the river. This raw material is accorded a certain respect, since its patron is an aquatic monster, dyë'vaë, which at times presents itself in the form of the western rainbow.

The clay is said to become useless if a pregnant woman touches or even approaches it: it will not bind, and the jars, on drying, will shatter into pieces. It is considered very dangerous for a woman in this condition to go to the bank to fetch clay, as illustrated by the following legend.[2]

> Once, a group of women went to a bank to collect clay for pottery. A woman big with child insisted on accompanying them in spite of the others counseling her not to. The others had already dug out the clay that they needed and had piled it on the bank, where they were still standing when the pregnant woman, seeing nothing suspicious, went down to dig clay, too. She squatted down in the middle of the pit, which was half-filled with water, and took out clay with both hands. Suddenly, dyë'vaë, down at the bottom, allowed a muffled roar to be heard. The women on the bank heard it and cried out: "The owner of the clay is angry! Come up quickly!"
>
> "What is the matter?" replied the pregnant one. "I heard nothing." And she continued to dig. She had just taken out a good quantity of clay when a muffled thunderclap was heard.

[1] Tessmann, p. 561.
[2] Cf. the legend of tau/čipë, p. 120.

1:Nimuendajú E-5 (1941-1942) 1952
SQ20 Tucuna SQ20

there are no Tukuna who sit around all week eating just bananas is because they like, above all, to eat fish, which obliges them to go fishing almost every day; sometimes the catch is small. Again, once in awhile, they wish to eat game, which they can obtain only by extensive trips through the country.

The husband must clear the undergrowth and burn it for his plantation. The house needs repairs, and his weapons and fishing tackle require constant attention. He cuts and sews the clothes for his family, with remarkable ability, makes a canoe for his own use or to sell at a good price, and helps his wife weed the garden, make farinha, and fetch kindling or fruits from the jungle. The wife, who must take care of the children and kitchen, clean the house and clothing, spin tucum thread, make hammocks or baskets or pottery, obviously has no time for swinging in a hammock either. Furthermore, many take enormous pleasure in their plantations, spending the better part of the day there.

That the Tukuna are neither intellectually lazy nor obtuse in understanding is proved by the many alien culture elements which they have adopted and assimilated with real advantage to themselves: first, the ubá of the Omágua, then the casco of the Neobrazilians, in place of the small, primitive canoe of paxiuba barriguda; the mosquito net and subsequent modification of the house; the manufacture of manioc flour, which gives them an appreciable income; clothing, which is a necessity in a land infested by mosquitoes; firearms, sewing machines, and many other items of lesser importance.

All in all, most members of the tribe at least are free from that snobbishness which impels some Indians thoughtlessly to ape the Neobrazilians and to deprecate their own traditions. The Tukuna have preserved the purity of their own language, having adopted not more than two dozen words from the Portuguese, and there is no evidence of bastardization or decadence in the grammar.

The puberty ceremonies with their complicated ritual still persist today, and moiety exogamy continues to be rigorously maintained. Similarly, the religion of the Tukuna in its fundamental concepts has been kept free of Christian influence. This is why the Tukuna have survived to this day as a numerous tribe, with their own ethnic characteristics, whereas all the other tribes that were formerly their neighbors have disappeared.

Visits

In spite of their rebellious individualism, their occasional choleric outbreaks, and their constant fear of witchcraft, the Tukuna are far from being unsociable folk. Reciprocal visits are extremely frequent, and invitations to festive reunions are at times so numerous that the recipient with the best will in the world cannot attend them all. An Indian may suddenly feel the desire to visit an acquaintance, friend, or relative, frequently one who dwells a few days' canoe journey away. He loads his mosquito net, some tururí cloth, and clothing into a burden basket, placing it in the canoe, together with a hamper of farinha, a cooking pot, some gourds, and his fishing gear, and covering it all with a mat of banana leaves. (Pl. 4.) Finally, the family also embarks—the dog, the parrot, and the tiny monkey, too—and they voyage forth through the igarapés, sinks, and lakes. When nearing the house of the person to whom the visit is being paid, the traveler